

REMARKS

This amendment responds to the Office action dated April 23, 2003, in which the Examiner rejected claims 1-11 and 21-23, all of the claims pending in the application. Applicants have canceled claims 12-20 without prejudice or disclaimer, and reserve the right to present them in a continuing or divisional application. Reconsideration and reexamination are respectfully requested in light of the foregoing amendments and the following remarks.

The § 102 (b) Rejection

The Examiner has rejected claims 1, 5, 7, 10 and 11 under 35 U.S.C. § 102 (b), asserting that the claims are anticipated by Toma. The Examiner states that Toma teaches an example of an aluminum alloy suitable for fin material for tubes for a heat exchanger comprising Mn, Si, Fe, Mg, and Cu in ranges that overlap those contained in the rejected claims. Further, the Examiner notes that Toma recites a narrow range of Fe that overlaps that recited in the claims. The Examiner admits that Toma contains Zr in his alloy, but argues that the use of the transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps, "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. The Examiner asserts that the addition of Zr would not materially affect the basic and novel characteristics of the claimed invention, and that therefore the rejection is deemed proper.

Applicants respectfully traverse this rejection. Applicants submit that the Examiner has misconstrued the term "consisting essentially of" as permitting the Examiner to ignore positively recited elements in a reference, where the Examiner posits, without any support in the record, that an element can be removed without changing the characteristics of the alloy in the reference.

Such an approach is completely at odds with established tenets of claim interpretation, and has no basis in fact in the present record. As stated in Toma, Zr plays an important role in the formulation of the Toma alloy. Zr is apparently added to improve the high temperature so resistance and must be a minimum of 0.02% to have the desired effect. strength of the fins made by Toma. Zr, however, in the view of applicants, would add undesirable properties to their foil, and therefore its presence in Toma cannot be ignored as an immaterial element. Zr has a grain modifying effect, and its presence affects the grain size of the final fin, which in turn affects the strength of the product. In addition, Zr, a relatively heavy element, makes an alloy more dense, a property applicants sought to avoid (see specification, page 8, lines 31-34). As such, the Examiner seems off the mark in taking the position that Zr can be neglected in assessing the anticipatory effect of Toma. Accordingly, applicants submit that the rejection is improper and should be withdrawn.

The § 103 (a) Rejections

The Examiner has rejected claims 1-11, 21 and 23 under 35 U.S.C. § 103 (a) as being unpatentable over Sircar. The Examiner asserts that Sircar teaches an aluminum alloy that has overlapping ranges with the claimed invention. The Examiner admits that Sircar teaches that no Mg is present in examples A-K in Table 1, but includes Ti in the alloy discussed in his patent. The Examiner discounts the presence of Ti, asserting that the presence of Ti does not materially affect the basic and novel characteristics of the claimed invention. Further, the Examiner states that Sircar teaches that his Al-Mn-Fe-Si alloy exhibits improved combinations of corrosion resistance and hot formability, and that Mg is believed to adversely impact certain brazing operations, and should be maintained at less than 0.1%. The Examiner concludes that since Sircar teaches a substantially overlapping alloy composition, complete with motivation to select the present claimed narrow ranges of Cu and Mg, it is held that Sircar creates a *prima facie* case of obviousness.

Once again, applicants traverse the rejection, and submit that Sircar does not provide a proper basis for rejecting the foregoing claims for obviousness. The effect of Ti on the properties of the materials taught by Sircar is well known to produce corrosion resistance in the final product. As an example, U.S. Patent No. 5,906,689 (Exhibit 1 hereto), by the same applicant, clearly states that Ti and Zn are effective for corrosion resistance. Since applicants use Zn in some versions of their alloy

invention, the addition of Ti would be expected to have an effect on the alloy composition.

More important, applicants made a deliberate choice to omit Ti, in an effort to avoid adverse effects from Ti in the rolled fin stock that they were trying to improve. Ti has a grain refining effect in the molten alloy that results in a reduction of large grains in the final fin, which is important for strength in a rolled fin (see application, page 11, lines 1 to 5). Further, the atomic weight of Ti increases the density of the alloy, and therefore its weight, making the resulting alloy undesirably heavier (see application, page 8, lines 31 to 34). Ti also affects the work hardening properties of the alloy, in a similar manner as Mn. Since applicants reduced Mn to control work hardening, there would be no motivation to add Ti to undo that effect (see application, page 10, lines 15 to 22).

Additional differences reinforce the conclusion that the present invention would not have been obvious based upon the Sircar reference. The present application teaches and claims a lower limit on Si that is substantially higher (at 0.25%) than that taught by the Sircar reference. Sircar teaches a preferred Si level of not more than 0.06 %. In the present case, the higher Si minimum is selected (see application page 9, first paragraph) to correct a smut (reaction product) problem that occurs during cold rolling of these materials, and is largely related to continuously cast material. The Sircar reference provides no such direction, so

applicants submit that Sircar teaches away from the claimed invention for this reason as well.

The Examiner has also rejected claims 4, 6, 8-9, and 21-23 under 35 U.S.C. § 103(a), as being unpatentable over Toma. The Examiner asserts, concerning claims 4 and 6, that Toma teaches an aluminum alloy suitable for fin material for tubes for a heat exchanger comprising Mn, Si, Fe, Mg, and Cu in the ranges set forth in Table 1 contained in the office action. The Examiner asserts that the ranges of elements noted above overlap with the ranges contained in the claimed invention. The Examiner asserts that because of the overlap, the Toma reference establishes a *prima facie* case of obviousness.

The comparison set forth by the Examiner, however, omits a critical difference discussed above in connection with the anticipation rejection: that the Toma alloy contains Zr, while applicants' alloy omits Zr. As mentioned above, this deliberate alloy design choice imparts important differences to applicants' alloy. First, the omission of Zr by applicants, or its inclusion by Toma, affects the density of the alloy. Since applicants sought to minimize the density of their material in order to maintain the desired lightness, this important characteristic cannot be overlooked in determining the obviousness of the claimed invention. Further, Zr has a grain modifying effect that applicants also considered undesirable. According to Toma, omitting Zr would adversely affect the strength of the alloy, and therefore the strength of any product such as a foil which can be made therefrom. Nevertheless,

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applicants omitted this element, and obtained improved sag resistance as a result of the larger grain size resulting from the omission of Zr. In addition, Zr affects work hardening of the alloy, and applicants wanted to control this variable as well, so they did not want to add Zr, with its attendant affect on work hardening.

In sum, applicants' alloy differs in important and unobvious ways from the alloy discussed in Toma. These differences, notably the absence of Zr, casts doubt on the Examiner's assertion that the claimed invention would have been obvious in view of Toma because of allegedly insubstantial differences between Toma and the claimed invention. For essentially the same reasons, the product-by-process claims (claims 21-23) should be allowable over Toma. The product of the process differs from the alloy of Toma, as set forth above, so claims directed to a process for making such an alloy product should also be allowable based upon those differences.

Applicants submit that they have demonstrated that the rejections lodged by the Examiner are misplaced, and should be reconsidered and withdrawn. Early notification to that effect is respectfully requested.

Applicants note that the Examiner requested a corrected declaration including the serial number of the provisional application, as that information was inadvertently omitted from the declaration filed with the PTO, and that applicants amend the specification to recite the priority application at the beginning of the specification.

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Applicants have made the requested amendment to the specification, and have prepared a corrected declaration, which is being circulated among the inventors for execution and will be filed as soon as the fully executed copy is received by applicants counsel.

The Commissioner is hereby authorized to charge any fees which may be required in consideration of this filing and to credit any overpayment to our Deposit Account No. 03-3125.

Respectfully submitted,

COOPER & DUNHAM LLP

By 

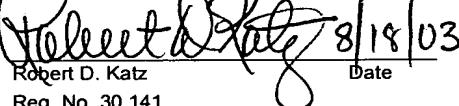
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I hereby certify that this paper is being deposited this date with the U.S. Postal Service as first class mail addressed to:

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